

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. Canceled.
2. Canceled.
3. (currently amended) ~~The method of claim 1, further comprising the steps of:~~

A method to select a captain control node from a plurality of control nodes, comprising the steps of:

supplying a plurality of host computers, wherein a different one of said plurality of control nodes is disposed in each of said plurality of host computers, and wherein each host computer comprises a storage management program to manage the transfer of data to data storage and retrieval systems;

supplying a plurality of data storage and retrieval systems, wherein each data storage and retrieval system comprises a plurality of host adapters, a plurality of data storage devices, a processor, and a data cache;

supplying a communication link interconnecting each of said plurality of host computers and each of said data storage and retrieval systems;

sending by each of said plurality of control nodes a first signal to each of the other control nodes;

receiving by each of said plurality of control nodes, a response signal from each of the other control nodes;

determining by each of said plurality of control nodes individual response times for each of the other control nodes;

determining an aggregate response time for each of the plurality of interconnected control nodes;

determining whether to select a captain control node using said aggregate response times;

operative if the captain control node is selected using said aggregate response times;

determining a minimum aggregate response time; and

determining if two or more control nodes each have said minimum aggregate response time;

if two or more control nodes each have said minimum aggregate response time.

repeating said providing, receiving, calculating, and determining steps;

designating a control node having said minimum aggregate response time as the captain control node to coordinate the operations of said plurality of host computers;

calculating by each of said plurality of control nodes a standard deviation for that control node's aggregate response time;

providing said standard deviation by each control node to each of the remaining control nodes.

4. (previously presented) The method of claim 3, further comprising the steps of:

operative if two or more control nodes each have the minimum aggregate response time,

determining which of said two or more control nodes has a smallest standard deviation;

designating the control node having the minimum aggregate response time and the

smallest standard deviation as the captain control node.

5. (currently amended) The method of claim [[1]] 4, further comprising the steps of:
operative if the captain control node is not selected using said aggregate response times,
providing a captain control node selection function;

determining a performance score for each of the plurality of control nodes using said
captain control node selection function;

designating a control node having a minimum performance score as the captain control
node.

6. (original) The method of claim 5, wherein said captain control node selection
function comprises the equation:

$$\text{Performance Score} = a(\text{aggregate response time})^c + b(\text{standard deviation})^d$$

wherein a, b, c and d are positive constants.

7. Canceled.

8. Canceled.

9. Canceled.

10. Canceled.

11. Canceled.

12. (currently amended) ~~The article of manufacture of claim 10, said computer-
readable program code further comprising a series of computer-readable program steps to
effect:~~

An article of manufacture comprising a host computer comprising a control node and a
storage management program to manage the transfer of data to data storage and retrieval

systems, wherein said host computer is interconnected by a communication link with a plurality of other host computers each comprising a control node, and wherein said host computer is further interconnected by said communication link with a plurality of data storage and retrieval systems, said host computer further comprising a computer useable medium having computer readable program code disposed therein to select a captain control node from said plurality of control nodes, wherein each data storage and retrieval system comprises a plurality of host adapters, a plurality of data storage devices, a processor, and a data cache, the computer readable program code comprising a series of computer readable program steps to effect:

sending a first signal to each of the other control nodes;

receiving a response signal from each of the other control nodes;

determining individual response times for each of the other control nodes;

determining an aggregate response time for said article of manufacture;

receiving aggregate response times from each of the other control nodes;

determining whether to select a captain control node using said aggregate response

times;

operative if the captain control node is selected using said aggregate response times,

determining the minimum aggregate response time;

operative if the captain control node is selected using said aggregate response times,

designating a control node having said minimum aggregate response time the captain control node to coordinate the operations of said plurality of host computers.

determining if two or more control nodes each have said minimum aggregate response

time;

if two or more control nodes each have said minimum aggregate response time,
repeating said sending, receiving, calculating, and determining steps.

calculating a standard deviation for said aggregate response time for said article of manufacture; and

receiving standard deviations from each of the other control nodes.

13. (previously presented) The article of manufacture of claim 12, said computer readable program code further comprising a series of computer readable program steps to effect:

operative if two or more control nodes each have said minimum aggregate response time, determining which of said two or more control nodes has a smallest standard deviation;

designating the control node having said minimum aggregate response time and the smallest standard deviation as the captain control node.

14. (currently amended) The article of manufacture of claim [[10]] 13, said computer readable program code further comprising a series of computer readable program steps to effect:

operative if the captain control node is not selected using said aggregate response times, retrieving a captain control node selection function;

determining a performance score for each of the plurality of control nodes using said captain control node selection function;

designating a control node having a minimum performance score as the captain control node.

15. (original) The article of manufacture of claim 14, wherein said captain control

node selection function comprises the equation:

$$\text{Performance Score} = a(\text{aggregate response time})^c + b(\text{standard deviation})^d$$

wherein a, b, c and d are positive constants

16. Canceled.
17. Canceled.
18. Canceled.
19. Canceled.
20. Canceled.
21. Canceled.
22. Canceled.
23. Canceled.
24. Canceled.